

If you use less, you pay less

**Why We Measure Energy Consumption**

Despite the use of energy-efficient technology throughout the Olympic Village, effective conservation also requires individual residents to shift their energy consumption behaviour. For this reason, the Village is equipped with energy metering systems that provide a baseline and encourage people to improve their behaviour.

Nick Farina is president of Enerpro, the company that provided iEMS – the integrated energy management system used in the Olympic Village. He says the business case for the system comes in lowering capital costs, saving money and creating comfort.

Farina says making savings visible helps to build awareness on many levels. For example, the information from the system provides residents with an economic incentive to cut their showers from ten minutes to two. On a larger scale, savings at the household level translate into efficiencies such as downsized infrastructure for water and sewer, and in the operation of building equipment such as boilers and HVAC systems. In fact, changes and adjustments based on information from the iEMS monitoring system have been show to result in energy savings of 10%–15% without retrofitting the actual heating or cooling equipment.

At Millennium Water, each tenant pays only for energy that they use. “If you use less, you pay less. This model should be financially painless,” says Farina.

**Summary of Economic Benefits of the integrated Energy Management System (iEMS):**

1. A revenue stream is produced for the lifetime of the equipment after it is installed.
  - The lifetime revenue stream is created through the bulk buying and selling of wholesale power from the utility and supplying it directly to the building’s occupants.
  - Property owners improve their competitive position by way of lower operating costs through reduced energy pricing.
2. Life-cycle costs are reduced by extending the longevity of the energy-consuming mechanical equipment installed in a building.
3. The capital value of the building increases, as it is more efficient and less prone to equipment failures and breakdowns.
4. The system contributes to green building rating systems, such as LEED.

**Energy Aware – Technology + Application**

“Sustainability is supposed to be a lifestyle,” explains Janice Cheam, President of Energy Aware Technology Inc. Energy Aware enables consumers to make lifestyle choices by seeing how much energy they are using as they go about their normal routines. The system displays the usage of cold and hot water, energy for heating and cooling, as well as electricity. Electricity use is monitored in real time, displaying either cost or kW per hour. This means that when you turn off a light or the dishwasher, you immediately see your energy cost go down.

Energy Aware provides a display called the PowerTab that connects to Enerpro’s sub-metering system and is included in every Olympic Village residential unit. The display consists of a 128 X 64 graphic LCD screen that uses wireless communication for maximum mobility. There is a different screen for each resource, which shows residents’ current rate of consumption and estimated bill each month. Three LEDs indicate whether consumption is average (amber), above average (red) or better than average (green).

“The first reaction people have when we explain our product is, ‘I can’t wait to show my kids’,” says Cheam. She says education is a positive feedback system that helps change people’s attitudes over time as well as their behaviour. It also offers rewards: real-time feedback on energy consumption enables homeowners to adjust their routine and save money.



The Energy Aware PowerTab is a display unit that communicates real-time energy and resource use in each suite.

**PROFILE**

**Janice Cheam**

President, Co-founder of Energy Aware Technology Inc.

“We really need to upgrade our energy infrastructure,” says Janice Cheam. Her interest in this challenge led her to launch her energy-related company.

After discussing the acceleration of climate change with a friend who had just returned from a United Nations conference, Janice became passionate about helping society waste less. Learning about climate change led her to an appreciation for energy conservation as a key area capable of delivering real environmental improvement. In 2005, Janice co-founded Energy Aware Technology with partner Lauren Kulokas.

Based in Vancouver, Energy Aware provides demand management solutions for today’s changing electrical grid. Energy Aware’s products allow utilities to gain maximum benefit from increased data flow with their customers, and allow individuals to better understand and control their consumption habits. By promoting resource-efficient behaviour and demonstrating sustainable practices, Energy Aware aims to protect and improve the well-being of future generations.

**CHALLENGE**

To policy makers and building code authorities: to require the installation of resource metering technology in all new residential and office units, to promote awareness of resource usage and opportunities for energy and potable water savings.